Studio SC USER GUIDE

Version 2.0

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To Clear All the Memory

1. Switch on the board while holding down the **Grab key** (located by the memory registers section)
2. 1-10 will flash on the memory registers
3. Release the **Grab key**
4. Type in **121297** fast (within 4 seconds),i.e. memory register 1 button, memory register 2 button, memory register 1 button, etc.

Manual Preset Section

The light gray faders, keys and printing, identify this section.
There are 12 (STUDIO 12 SC) or 24 channels (STUDIO 24) available and two presets , A and B.

The single or double preset:

There are two ways to set the **manual presets** of your Studio lighting desk:

The SINGLE PRESET operating mode; your Studio can control the double quantity of dimming channel it normally does (24 channels for Studio 12; 48 channels for Studio 24). In this case the fader **Master Preset *A*** act like the Master fader while the fader **Master Preset *B*** is not active. As the 12 (or 24) LEDS above the channel's fader are not enough to show the light output of the scene for all the channels, the **Flash button A and B** are used for the purpose.
Then, pushing the **button A** the LEDS will display the light output of the first 12 (or24) channels, while pushing the **button B**, the second group of 12 (or 24) channels will be displayed.

The DOUBLE PRESET operating mode; your Studio desk controls the standard channels it is designed for.
In this case the **Master Preset An** acts on **preset A** is the top one, while the **Master Preset B** on **preset B,** which is the bottom one.

To set the Single or Double Preset:

1. Living the Studio OFF, push and keep pressed the buttons A, B, MODE;
2. Switch On the desk;
3. Wait few seconds until the red led of the Direct button is ON, then release the above3 buttons.
4. Now the Studio is ready to be used.

To operate a show manually:

1. Set up a scene on A preset, using the faders to set the levels required.
2. Set the **Grand Master** to full
3. Raise the **Master Preset A** to full to output the scene
4. Set up the next scene on the B preset
5. Cross-fade between the two presets when required, by moving the faders so that A is at zero and B is at full
6. Both the masters must be enabled to perform this operation. When a master is enabled, the LED is lit on the button below the fader.

To operate a show using the GO function:

The Go function can be defined as a manual cross-fade timer function.

1. Set up the first scene on preset A, and then the next scene on preset B
2. Enable A master preset (LED lit) and disable B master preset (LED not lit)
3. Set a time using the manual preset cross time knob
4. Set both masters to full, scene A is now shown
5. When the cross fade is required, press both the buttons, A and B simultaneously. A now is disabled and B enabled, and the fade will occur according to the time set.
6. A new scene can now be set up on preset A and the process repeated.

Flash Function:

The flash master must be put to full.
If the button underneath a channel is pressed when the flash master is raised then the channel will flash to the level of the flash master.

Solo function:

If the Solo button is enabled (LED lit) then all other channels will be blacked out leaving only the channel flashed.

Link function:

A channel can be isolated from the control of Master A and B and connected directly through the Grand Master.

1. Press and hold down the **Link button,**
2. Rise the slider of the required channel on preset A to the level required
3. Release the **Link key**
4. This channel is now controlled by the Grand Master and will be unaffected by any cross-fades on the A and B masters.
5. To release the channel, press and hold the **Link key** again, and press the button underneath the channel to release it.

Chase Section

To set up a chase:

1. Put the **Direct fader** to full and push the button underneath
2. Press and hold down the **Chase button**
3. Press the number of the chase required on the B master section. This LED will now flash
4. Release the **Chase button**
5. Press the **Edit button**. This LED will now flash
6. Press and hold the **Step button**
7. Select the step number, if setting up a chase this will be the number one. Press the button under the number one fader on the B preset section. The green LED on the button will flash
8. Release the **Step button**
9. Select the channels to be in that step by pressing the button underneath each channel or setup the light output level of each channel by rising the channel fader to the desired value.
10. The step is now recorded, to record further steps then repeat numbers 6 to 9.
11. Press **Edit** when all steps of the chase have been plotted or modified.

To run a chase:

1. Put the **Direct master** to zero
2. Press the **Direct button**
3. Press and hold down the **Chase button**
4. Select the chase number required on the buttons under the B presets section. The green LED will now flash
5. Release the **Chase button**
6. Rise the **Direct master** to full, the chase will now run
7. Fade out the chase by fading the **Direct master** to zero
8. To de-select the chase, press and hold down the **Chase button** and press the chase number previously selected. The green LED will stop flashing.

To select the steps to be run:

Not all the steps of a chase need be run, despite being plotted.

1. Select the chase as above
2. Press and hold the **Step button**
3. Deselect or select steps as required. A step is selected if the green LED is lit
4. Release the **Step button**

Set the time of a Chase:

The speed of a chase will run is decided using the **Rate and Slope** knobs above the Step and Edit buttons.

Set the knob as required.

To allocate a Chase to a memory Register:

A Chase can be run from a memory Register in the section marked REGISTER.

1. Put the **Reg master** fader to full
2. Press and hold the **Reg button** next to the Chase button
3. Press the button under the Register master required. This button must be enabled to collect the chase
4. Release **Reg button**
5. Press and hold the **Chase button** and select the chase number required
6. Press **Step button**, the number of steps in the chase should show on the B master buttons with the green LED is lit. If none are lit then the required steps need to be selected.
7. Set the time of a chase using the **Slope and Rate knobs**
8. Release all buttons.

A chase can be added to a Master Register on top of any existing scene, and deleted from the register without effecting the scene.

To run a chase on a memory Register:

1. Raise the **Reg master** to full (next to the flash master)
2. Fade up the memory register that the chase is allocated to.

Several chases can be run at once using the memory registers.

To clear a chase from a memory Register:

1. Press **Reg button**
2. Press **Chase button** and ensure No chase light is flashing on channels button. If a chase light does start flashing, de-select it.
3. Release all buttons. The memory Register is now cleared.

To change the time of a chase allocated to a memory Register:

1. Raise the **Reg master** to full (next to the direct master)
2. Press and hold the **Reg button** next to chase button
3. Press the button under the memory Register which contains the chase to be modified
4. The speed of a chase will run is decided using the **Rate and Slope** knobs above the Step and **Edit buttons**. Set the knob as required.
5. Press the **Music button** if a sound to light flowing of chase' steps is required.
6. Press the **Direct button** and rise to full its Master. The new modification will be automatically stored.

Registers Section

The dark gray knobs and the keys and light blue printing identify this section.

The Studio desks have two operating mode which are the **Reg Mode (Register Mode)** and **Direct Mode.**

- **Reg mode** operates directly on the memory registers and allows to carry out the necessary variations to Programs and Chases, directly in the register without having to reconstruct the register's entire contents.
- **Direct mode** let the operator works live on the desk, that means: works manually on presets; create and use Presets, Chases and Programs; play manually with the Fixtures; play manually with stored memory registers.

They can be recalled by pressing the Buttons located in the **Chase Keyboard section** and in the **Scan control section**

Page button
There are 12 (or 24) Register faders and 12 (or 24) pages of register faders available for use. When the Page button in use is pressed a red flashing LED at that page's number under the Register fader will show.

To change the page of Registers:

1. Press and hold down the **Page key**
2. Select the page number required
3. Release the **Page button**

Mode button
The Mode key sets the mode for each master. There are 4 modes available. When the Mode key is pressed the LED is on each register button indicate which mode the master is set to.

OR - red flashing LED - this is an exclusive function, this overrides any other master when utilized
AND - red lit LED - this is an additive function, the Register can be used together with channels operating in a highest take precedence manner.
FLASH - LED not lit - this flashes any channels assigned to the master while the button is pressed; the master Flash caused the light output.
FLASH OR FADER - LED dim at 50% - this flashes any channels assigned to the master while the button is pressed or fade the channels according to the memory Master register and the Master Reg.

To change the mode of a Register key:

1. Press and hold the **Mode key**
2. Press the button under each master to have its mode changed until the red LED under the Register shows the right function

3. Release the **Mode key**

To allocate a scene (preset) to a register:

1. Set up the required scene on preset A or B
2. Press and hold the **Grab button**
3. Press the button under the required register
4. The scene is now stored
5. Release the **Grab key**

To clear a Register:

1. Make sure that all faders on presets A or B are at zero
2. Press and hold **Grab button**
3. Press the button under the Register to be cleared. The Register is now empty.

To copy a scene from a register to another:

1. Raise the Register of the scene to be copied
2. Press and hold down **Grab key**
3. Press the button under the Register to receive the scene

To add a channel to an existing scene:

1. Raise the Register containing the scene
2. Set the new channel to the required level on the A preset
3. Press and hold the **Grab key**
4. Press and release the Registers button under the relevant fader
5. Release the **Grab key**
6. Fade out the channel on the A preset. The new scene is now recorded.

Changing the level of a channel in a recorded Register:

1. Raise the Register containing the scene
2. Press and hold the **Link key**
3. Move fader, on A preset, of the channel to be adjusted to its new level
4. Release the **Link key**
5. Press and hold down the **Grab key**
6. Press and release the Register's button under the register
7. Release the **Grab key**
8. Press and hold the **Link key**
9. Press and release the channel key
10. Release the **Link key**
11. Put the fader of the changed channel to zero
12. The new channel level is now recorded in the register

To fade in/out a Register in a set time:

The Registers can be either AND or OR mode.

1. Disable the Register (press the button under the Register fader so that the LED does not dimly flash)
2. Raise the **Register fader** to full (there will be no output)
3. Set the time required using the **registers cross time knob** by turning it to the number of seconds or minutes required.
4. Press the button underneath the Register, the scene will now fade in to time and the LED will fade to full strength over time
5. To fade out, press the button again

To cross fade between Registers:

Put the Registers into **OR mode** (red flashing LED)

1. Fade in the first scene as above
2. Disable second scene (button under register not lit)
3. Rise second Register to full
4. Set the time of the cross fade using the Register **cross time knob**
5. Press button under the Register of the second scene
6. The Registers will cross fade between them to time

To add a register to another to time:

Put the Register to be added into **AND mode** (red lit LED).

1. Fade in the first scene as above
2. Disable second scene to be added (button under register not lit)
3. Raise second Register to full
4. Set the time of the cross fade using the Register **cross time knob**
5. Press button under the Register of the second scene, it will be added to the existing scene to time
6. Press button again to fade it out

Patching Functions

Patching a dimming channel

1. Press button **Setup**
2. Use the Up/Down arrows to scroll to **Dimmer Patch menu**
3. Press the right-hand Scroll button.
4. Press the Up/Down buttons to select the DMX channel (into the **DMX-CH** field) to be assigned to the console's control channel
5. Use the Left/Right arrows and move the cursor to the **"CHANNEL"** field
6. Set here the console's control channel to be assigned to the DMX channel (if the values weren't preset, selecting the control channel automatically creates the **LIM%** and **EQUAL** "fields")
7. Use the Left/Right arrows and shift the cursor to the **"Lim%"** field and set the limiter value to be applied to the control channel
8. Use the Left/Right arrows and shift the cursor to the **"Equal"** field and set the EQ curve to be applied to the control channel
9. Press the button **Setup** to store the settings and exit Setup.

Patching a Unit (Fixture) to the Scan Control

1. Press button **Setup**
   Use the Up/Down arrows to scroll to **Unit Patch menu**
1. Press the right-hand Scroll button
2. Press the Unit 1 button.
3. Press the right-hand cursor button to set the field to be modified
4. Shift the cursor to **TYPE** field and use the Up/Down buttons to select the desired fixture.
5. Use the Left/Right buttons to select the **FROM** field (start address) and set the required value
6. Check the configuration of the dip-switches on the display and set the fixture's in the same way
7. Repeat from above item 4 to patch new fixtures taking care to press the following Unit button (i.e. for the second fixture press Unit's button 2)
8. Press the button **Setup** to store the configuration and exit Setup.

Scan Control Functions

The gray knobs and keys and light blue printing identify this section.

Manual use of the unit:

A unit can be manually controlled at any time whether a Program is enabled or not. Into a running Program, it's possible to control only some desired fixture's channels while the other channels will follow the settings plotted in the program.

1. Select the **unit** required, then its LED will flash. Several Units of the same type can be grouped and controlled at the same time, by pressing and holding down the button of the first unit and then press the buttons of the other units. The Led buttons will all flash at the same time.
2. Set the scanner's channel as required using the faders and checking the value of the command sent on the display of the **Scan Control Section.**

To set the Active Effects of a Unit:

The Active Effects are the control channels of a Unit. By the time, enable or disable those control channels could be helpful especially when mixing several programs, which contain the same fixtures. A color chase program (which has only the control channel color enabled) can be mixed with another program which makes only the mirror movement (that means Pan & Tilt enabled while the other control channels are all disabled).
On the other hand, if the above 2 programs were made with all the control channels enabled, only one program per time could be used.
The default settings are with all the control channels enabled.

1. Select the **unit** required
2. Push the buttons of the scan section according to the requirements. The buttons' LED shows the status of the channel: **LED lit** means channel enabled while **LED not lit** means channel disabled.

To assign a shape to a unit:

Built-in programs (7 at present) which act on Pan and Tilt movement are available for each unit. They can also be stored into a program's scene, reducing in that way the time necessary to program, and customized to fit the requirements by changing the following parameters:
- X_SCL: scale on the X axis (from 0 to 100%)
- Y_SCL: scale on the Y-axis (from 0 to 100%)
- SPEED: speed at which the effect is run (from 0 to 255)
- ROTAT: direction of movement (forward or backward)
- ANG: starting angle of the movement (from 0 to 359).

1. Select the **unit** required
2. Press the right-hand scroll button till the **Shape** menu will appears on display
3. Select the desired Shape by using the fader to the Shape field

4. Set the parameters as necessary
5. Press the left-hand scroll button to move back to the unit control channels

To set up a program:

1. Decide which unit you are going to use in a programming sequence and allocate to the unit numbers section. For the purpose, use the **Unit Patch menu** located into the **Set Up menu.**
2. Press the **Prog number** you want
3. The units patched are immediately available and scenes will be stored while programming.

To record positions and functions for each unit in each scene:

1. Select the **program number**, its LED will be lit
2. Select the **scene number**, its LED will be lit
3. Select the first unit required, its LED will flash
4. Using the faders for each function, set the unit where and how you want it or assign it a shape.
5. Press and hold down Store button
6. Press the scene number
7. Release Store button
8. Repeat for each unit in each scene as required

To copy a scene into another:

1. Press and hold down **Store button**
2. Press the scene number to be copied
3. Press the receiving scene button
4. Release **Store button**

To check each scene:

1. Press the **Program number**
2. Press the **Scene number**
3. Press the **Unit number**
4. The display above the function faders will show what the different functions are doing

To disable/enable scenes:

1. Press the **Program number** and hold down the key
2. The key scenes, which made up the program, will lit up.
3. Press the **Scene's buttons** to desable the required scenes(LED off)
4. Release the Program button

To run a program in Direct mode:

1. Press the **Direct button**
2. Press the program number and release, the program is now running
3. Set the time of the program using **Speed and Rate knobs**
4. Pressing the **Bkward button** can run the program backwards
5. The program can be stopped at any time by pressing the **Pause button**
6. Press the **Music button** if a sound to light flowing of programs' steps is required.

To assign a program to a memory Register:

1. Press and hold **Reg button**
2. Select the desired memory register by pushing its button
3. Release **Reg button**
4. Press the **Direct button**
5. Press the desired program number and release, the program is now running
6. Set the time of the program using **speed and rate knobs**
7. Press and hold down the **Store button**
8. Press again the button of the selected Register
9. Release **Store button**

Utility Functions

The **button Util** gives access to the console's "utility" functions:
- remote fixture reset
- lamp ignition and dousing
- definition and control of the operating area for scanners and moving head units.

To set or modify the Working Area:

Operators often have to limit a fixture's scanning area to adapt stored programs to stage situations, which often change.
With a view to this, Studio consoles allows to control the 12 different scanning areas for each fixture (obviously only scanners and moving head units) which operators have at their disposal.
Reducing the scanning area of a fixture also considerably improves the precision of moving parts, whether they're mirrors or heads. In fact, reducing the scanning area doesn't reduce the number of steps for positioning, which remains unchanged (255 for 8-bit fixtures and 65.536 for 16-bit fixtures). If the fixtures being controlled don't have commands for automatic inversion of scanning co-ordinates, the scanning areas allow to solve the problem by simply crossing over the corner values.

1. Press the **Util** button.
2. Scroll with the scroll buttons until **"Working Area"** appears on the display.
3. Push the button unit number whose working area has to be modified
4. With the Left/Right buttons select the **SET 1** field and use the fader below to choose one over the 12 available scanning areas (SET 1 to SET 12)

5. To modify the scanning area, press the light gray button under the one of the 4 small corner symbols, showed on the display, then move the joystick to the required new corner.
6. To store the new mirror position, press the button again. Operating areas can be created as required, regular or irregular scanning areas can be created.
7. Press the **Util** button to store the settings and leave **Working Area menu**.

To test a new Working Area

1. Press the **Util** button.
2. Scroll with the scroll buttons until **"Working Area"** appears on the display.
3. Press the light gray button corresponding to **Test** writing showed on the display
4. Check the scanning area to be tested by moving the joystick
5. Press the **Util** button to leave **Working Area menu**.

To reset a Unit:

1. Press the **Util** button.
2. Scroll with the scroll buttons until **"Reset"** appears on the display.
3. Press the light gray button corresponding to the **Unit** to be reset.
4. The unit selected will automatically reset to its home position
5. Press the **Util** button to leave **Reset menu**.

To control the remote lamp ON/OFF of a Unit:

1. Press the **Util** button.
2. Scroll with the scroll buttons until **"Lamp"** appears on the display.
3. Press and hold for few seconds the light gray button corresponding to the desired **Unit**
4. The unit selected will automatically strike its lamp On or Off according to the requirements
5. Press the **Util** button to leave **Lamp menu**.

Internal Library

This menu, made up of 3 sections, allows you to create, modify or delete the Fixture's configuration from the Pilot's internal memory.
The 3 sections available are:

1. **Create New Unit**
2. **Edit Existing Unit**
3. **Delete Unit**

Edit a New Unit

13 sub-menus are necessary to create a New Unit.

1. **Total DMX Channels**: set here the total number of channels the fixture has
2. **LCD Effect Label**: set the quantity of LCD screens needed to display the fixture's functions here. It is also used to write the label for the fixture's functions.
3. **Internal Patch**: assign here the DMX channel's output to the fixture functions.
4. **Stand-by Values**: set here the DMX stand-by values for the HTP channels; dimmer and strobe are usually set to the close/off position
5. **Effects Type**: set here the fixture's channels as Effect **(Eff)** or Dimmer **(Dim)**. Those channels set as Dimmer channels can be controlled through the Grand Master Fader or Master Reg. Fader
6. **Mirror Head Patch**: set here the Pan and Tilt channels. In case of 8 bit control set only the "H" channel. If 16-bit is required use whether "L" and "H" channels.
7. **Hard/Soft Cross**: set if the fixture's channels must be timed when running into a program **(Soft)** or "snap changing" at the fastest speed available **(Hard)**.
8. **Unit Name**: enter here the name of the Fixture
9. **Unit Description**: enter here a brief description of the fixture
10. **Reset/Lamp Values**: set here the DMX values for the remote **Lamp ON/OFF** and the remote Reset.
11. **Dip-Switch Config**: set here the quantity of dip-switches the fixture uses to assign the start address. SGM's fixtures use 9 switches dip-switch
12. **Beam Find Value**: set here to open position those channels which allows the operator to see the fixture's beam when setting the Working Area (iris open; dimmer open; strobe open; white open to gobo and color)
13. **Control Type**: the control type for the fixture's channels can be Linear **(Lin)** or Tabled **(Tab)**. **Lin** channels use all the DMX range of values to control a fixture's function while **Tab** channels use only the DMX values, which select a specific Gobo or Color.

To insert a new fixture configuration into the Studios' library:

6. Press the **Menu** button.
7. Scroll with the up/down arrows until **"Internal Library"** appears on the display.
8. Press the right-hand Scroll button to enter the menu
9. Scroll with the up/down arrows until **"Create New Unit"** appears on the display.
10. Press the right-hand Scroll button to enter the menu. 13 sub-menus are available to create a New Unit.

To insert the new fixture name:

1. Scroll with the up/down arrows until **"Unit Name"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. The display will show **"-NNNNNNNNNNN-"**
4. By using the up/down arrows replace the "N" with the required letters to write the fixture's name.
5. Use the left/right arrows to shift to next/previous letter
6. Refer to above item 4 and 5 to write the fixtur's name
7. Press the right-hand Scroll button to escape the menu.

To insert the Total DMX Channel:

1. Scroll with the up/down arrows until **"Total DMX Channel"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. The display will show **"Total channels occupied on DMX….. [01] "**
4. By using the up/down, assign the required DMX channels for the fixture to be set.
5. Press the right-hand Scroll button to escape the menu.

To assign the parameters' name to the faders :

1. Scroll with the up/down arrows until **"LCD Effect Label"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. The menu consists of 2 sub-menus: **"LCD Pages"** and **"Effect String"**.

3a) **LCD Pages:** allows to set the amount of required LCD screen to view the fixture's parameters on display. Each screen can contains 6 parameters, so in case of a fixture having 18 channels, the required LCD screen are 3 (no.channels divided by 6).
In addition, Pan/Tilt/Remote reset/Remote lamp on/off, must not be considered as they can be set into other menu.

Press the right-hand Scroll button to enter the **"Effect String"** menu.

3b) **Effect String:** allows to write the parameter's name on top of each scann control fader.

1. By using the up/down arrows replace the "----------" which appear on display with the letters required to insert a short name describing each fixture's parameter. Allow 4 or 5 letters to each name for a single fader.
2. By using the up/down arrows replace the "-------" with the required letters to write the fixture's name.
3. Use the left/right arrows to shift to next/previous letter.
4. Use the right-hand button to move to the next LCD screen.
5. To escape the menu, push the left-hand button until **"LCD Effect Label"** appears on the display.

To assign the DMX channels to the parameters:

1. Scroll with the up/down arrows until **"Internal Patch"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. According to the fixture's configuration, assign the DMX channel to each parameter's name previously written by means of **"LCD effect Label"**.
4. Press the left-hand Scroll button to escape the menu.

To set the "Stand by values" to each parameters:

1. Scroll with the up/down arrows until **"Stand by values"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. Now, set the DMX stand by values for the HTP channels. Dimmer and shutter/strobe must be usually set to the close/blackout position.
4. Press the left-hand Scroll button to escape the menu.

To set the parameter's type:

1. Scroll with the up/down arrows until **"Effect type"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. By using the up/down arrow, set here as DIMMER type, those channels to be overall controlled by the Grand Master. Usually the Dimmer channel is set as DIMM type.
4. Press the left-hand Scroll button to escape the menu.

To set the Pan and Tilt channels:

1. Scroll with the up/down arrows until **"Mirror Head Patch"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. By using the up/down arrow, enter the Pan and Tilt channels. In case of 8-bit control set only the "H" channel. If 16 bit is required use whether "L" and "H" channels.
4. Press the left-hand Scroll button to escape the menu.

To set the Hard/Soft Cross:

1. Scroll with the up/down arrows until **"Hard/Soft Cross"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. By using the up/down arrow, set here each channel as Soft or Hard. Soft allows to change the status, of a single parameter, to time. Hard mode, allow the snap changing, of the status of a single parameter, at the fastest speed available when running into a sequence
4. Press the left-hand Scroll button to escape the menu.

To set the Reset/Lamp value:

1. Scroll with the up/down arrows until **"Reset/Lamp value"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. By using the up/down arrow, set the channel for the remote reset and remote lamp ON/OFF and the On/Off values which enable the parameters to act.
4. Press the left-hand Scroll button to escape the menu.

To set the Dip-switch configuration:

1. Scroll with the up/down arrows until **"Dip-switch configuration"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. By using the up/down arrow, set here the quantity of dip-switches the fixture uses to assign the start address. SGM's fixtures use 9 switch dip-switches.
4. Press the left-hand Scroll button to escape the menu.

To set the Beam find value:

1. Scroll with the up/down arrows until **"Beam Find Value"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. By using the up/down arrow, set here the open position to those channels parameters which allows the operator to see the fixture's beam when setting the Working Area (iris open; dimmer open; strobe open; white open to gobo and color)
4. Press the left-hand Scroll button to escape the menu.

To set the Control Type for each parameter:

1. Scroll with the up/down arrows until **"Control Type"** appears on the display.
2. Press the right-hand Scroll button to enter the menu.
3. By using the up/down arrow, set here the control type for the fixture's channels. The control type can be Linear **(Lin)** or Tabled **(Tab)**.
4. **Lin** channels use all the DMX range of values to control a fixture's function while **Tab** channels use only the DMX values, which select a specific Gobo or Color.
5. Press the left-hand Scroll button to escape the menu.

Synchronization of the Desk with MIDI Signal

All the Studio desks can be driven by using an external device, which can provide a MIDI, signal (i.e. a sequencer or keyboard). A MIDI signal is a digital protocol designed to allow Musical Instruments to communicate. It is used frequently in lighting by remote control. It connects via a 5 pin DIN connector.

First of all the **work channel** must be set: the Midi protocol allows 16 channels (from 1 to 16) to be used. To set the right channel we must use the **Settings dip-switch** placed on the rear side panel of the Studio. In the case of more desks controlled by a Midi device, just select a different channel for each desk.
The MIDI INPUT information the desks receives is:

- NOTE ON: the range 36-59 identify the channels from 1 to 24 to be switched on (it can be used even with the **double preset mode**); while VELOCITY is used to set the light output level;
- NOTE OFF: the range 36-59 identify the channels from 1 to 24 to be switched off;
- PROG CHG: the range 0-23 select the registers;
- ALL CHANNEL OFF: is used to switch off all the channels. The instruction is CONTROL CHANGE 7Bh 0h;
- BANK SEL: is used to select the current page. The instruction is CONTROL CHANGE 0h followed by a number 0 to 23 (page 1 to 24).

There is the possibility to control more than one desk via Midi simply using a Studio desk like a **Master** and all the others as a **Slave**. There are no special settings to do on the **Master** desk, just plug the Midi cable and play. In this case the **Slave** desks must be set on Midi Channel 1.
The MIDI OUTPUT information sent from the desk is:

- PROG CHG: is used to change a register on the **Slave desk** every time you push a register button on the **Master desk**;
- BANK SEL: is used to change a page on the **Slave desk** every time you select a page on the **Master desk**.

WARNING: the register buttons must be set in SELECTOR or ON/OFF mode when the desk is controlled via Midi. Furthermore, the only way to run **Scanner Programs** via Midi is assigning them to the **Memory Registers**.

Synchronization of the Desk with RS232

The Studio can use the serial interface for connection to outboard devices, which synchronize its operation. By means of a computer, it is possible to send commands via the RS232 signal.

CHANNEL ON
Purpose: select the channel to be switched ON. The command is followed by 2 values, which select the channel and the light output level.
The first value is the channel: it is possible to select 24 channels (1 to 24) and the range values are 0-23.
The second value is the light output: the range values 0-127 are used to set the light output (0 is 0% of light while 127 is 100% full light)
Status: CH ON(A1h)
Example: CH ON - 3 - 64 select the 4th channel to be switched ON at 50% of light output.

CHANNEL OFF
Purpose: select the channel to be switched OFF. The command is followed by a value, which selects the channel to be switched OFF. The range values is 0-23
Status: CH OFF(A2h)
Example: CH OFF - 0 switch off the first channel.

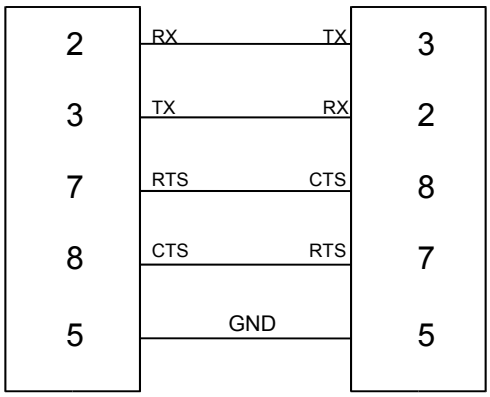
REGISTER CHANGE
Purpose: enable a register. It is possible to select 1 to 24 registers and the command is followed by a value between 0 and 23.
Status: REG CHG(A0h)
Example: REG CHG - 23 enable the 24th register. If this was already enabled, the instruction will disable it.

ALL CHANNEL OFF
Purpose: it will switch OFF all the channels previously enabled by the instruction CH ON.
Status: ALL OFF(A3h)
Example: ALL OFF

PAGE CHANGE
Purpose: it allows you to change the pages on the desk. It is possible to change 24 pages when the command is followed by a value, which selects the page
Status: PAGE CHG(A4h)
Example: PAGE CHG - 10 change the 11th page.

DEVICE SELECT
Purpose: select which desk is controlled by the PC or RS232 signal source. It is possible to select up to 16 desks. To let this instruction works, each desk must have the dip-switch set on the same channel of the command. The dip-switch is located on the side rear panel of the Studio.
Status: DEV SEL(A6h)
Example: DEV SEL - 2 select the 3rd desk

Connection of the RS -232 CABLE for Studio lighting consoles:



SMPTE

Society of Motion Picture and Television Engineers (SMPTE) began work to develop a standardized synchronization method for the new medium. The resulting 'SMPTE time code' is simply the recording of time information, in hours(HH), minutes(MM), seconds(SS) and frames(FF), as a digitally encoded signal on one of the tracks of a multi-track audio or video tape. There are a number of frame rates in use today:
24 used in motion-picture film
25 EBU standard (European Television)
30 NTSC monochrome standard (audio)
SMPTE Time code can be recorded to an audio track (Longitude Time Code, or LTC) or it can be recorded as part of the video signal (Vertical Interleave Time Code, or VITC). Either way, the time code 'word' is the same.

RECORDING AN SMPTE TRACK
The SMPTE can be used on the Studio desks in 2 ways: INTERNAL TIMING or EXTERNAL TIMING. In both cases, it is possible to record up to 24 tracks (Studio 24/Studio 24 SC) with a limit of 24576 "events" recorded for all tracks. That means, it is possible to record a memory changes or flash, register cross time variations, page changes. Furthermore, when a track is enabled, it is possible to work manually on the lights and/or scanners and/or registers.
In addition Studio lighting desks has been designed to work with the worldwide SMPTE standards: 24, 25 and 30 FPS (Frames Per Seconds). The desk automatically configures the parameters, so that user has only to "plug and play" with it.

INTERNAL TIMING
When working without any external devices connected, please proceed as follows:
1. Hold down keys <ENTER> & <PLAY> for at least 4 seconds, until the led blinks.
2. Now, exactly at the moment you want to START the recording, press a key of the Register section (1...24) selecting the track to record. If the track was already done, then it will be replaced.
3. Now you can proceed to record your show, selecting the output memory for each show period.

4. When you want to STOP the recording, hold down the <PLAY> key and press again the track's key you selected before.

5. To PLAY-BACK the track, you must hold down <PLAY> key and then press the track's key you have just recorded, exactly at the time you pressed the same key when you record the track (this is important to obtain a good synchronization with music). The play-back will stop automatically when the track reaches its end. However, you can stop it any time by holding down <PLAY> and pressing the track key. The SINGLE or LOOPING PLAY is selected by pressing the <MODE> key: the led on the button <PLAY> shows the mode (OFF=single / ON=looping).

EXTERNAL TIMING

To use the Studio as a slave of an SMPTE device, just connect it, through a 3 pin XLR cable, to an SMPTE source (video recorder, computer, ...) and then proceed as follows:

1. Set the starting time in the source and put it in "pause" (example: if you have a tape of 120 minutes, you can set 01:23:45:00...).
2. Press and hold down keys <ENTER> & <PLAY> for at least 4 seconds, until the led blinks.
3. press a key of the Register section (1...24) selecting the track to record. If the track was already done, then it will be replaced.
4. When you are ready, you can "PLAY" the source (video recorder, ...) and proceed to record your show selecting the output memory for each show period.
5. When you want to STOP the recording, hold down the <PLAY> key and press again the track key you selected previously.
6. To PLAY-BACK the track, you must rewind your source (to the previous starting position), put it in pause and then hold down <PLAY> key and the press the track key you just recorded. The play-back will stop automatically when the track reaches its end.
7. However, you can stop it any time holding down <PLAY> and pressing the track key.